Lower Columbia College

Wednesday, August 22, 2012

Group 1 Recommendations

1. Use guided inquiry to create a focused and safe environment for collaboration.  
     
   We have been actively involved in inquiry at LCC. Through this process, we have analyzed student’s work in our problem solving module and common final exam. Our group functioned best without a strict protocol however we did focus on a target question. After our inquiry, we have made appropriate changes in the curriculum. Our department values this process and plans to continue.
2. The inquiry process
   1. starts with a targeted question around student learning.
   2. Iteratively gathers and collects evidence (possibly with a protocol) through activities such as FIGs, CATS, classroom exchanges and common assessments.
   3. Results in ongoing changing practice.

Many members of the department have participated in a variety of CATs with positive results. Through faculty collaboration, we hope to expand the number of faculty using CATs. While classroom exchanges have not yet gained traction, there are concrete plans for them in the future.

Group 2 Recommendations

1. Departmental investment in creating a curriculum which supports deeper student understanding: Faculty take control of curriculum either by re-examining course learning outcomes or using backwards design – this process is not dictated by textbook content or other external forces but by what we *really* want students to understand. Faculty must have a willingness to rethink or move away from the traditional curriculum. This process allows for deeper learning experiences in the classroom and a shift in the role of faculty from lecturer to facilitator. Students explaining their mathematical thinking becomes a powerful learning activity.   
     
   LCC’s new curriculum was outlined first and then a custom text was created to match the desired content order. Our problem solving module shows the biggest departure from the traditional curriculum and has also been the source of some of our greatest challenges as it has required faculty to develop their own materials. The level of emphasis on student explanation of their understanding varies by instructor.
2. Proactive leadership in the (campus) community promoting math literacy: Math faculty should be actively engaged in shaping the campus cultural perception of mathematics. Specifically, faculty should advocate the fact that no one is born “bad at math” and lead a conversation that challenges the conventional wisdom regarding what math is and how it is learned.   
     
   This issue has not been addressed directly on our campus, but is something we value and should consider working on in the future.

Group 3 Recommendations

1. Now we use Formative Assessments in the classroom to frequently gain information about student understanding and we use that information to decide what to do next as teachers. Formative Assessments include, but are not limited to: common cross-course and cross-section questions, group quizzes/tests, multiple drafts of complex tasks, CATS, self-assessment.  
     
   The use of formative assessment is permeating through the math department at LCC. Many faculty are currently using common assessment, group quizzes, and CATs.
2. As the use of Formative Assessment moves from educators tinkering in isolation to a visible part of our collective practice there is a noticeable shift in the adaptive capacity of a department to help students be successful. The visibility comes through participation in structured FIGS, formal lesson study, departmental initiatives using evidence-based practices, and state-wide retreats.  
     
   Informal gatherings are an essential part of our shift to a collaborative approach to curriculum development and classroom practice.

Group 4 Recommendations

1. Effective tasks were open ended, not listed with a,b,c,d to lead to the answer. Just ask the question and allow students to struggle in the practice of real problem solving. These require training, experimentation, reflection and support to create.  
     
   Instructors have individually and collectively created new open ended tasks. Created tasks are archived online and sorted by topic for easy access. We still struggle to find time to fully incorporate such tasks in our classes.
2. A skilled facilitator is clear on their goals/outcomes beyond math skills, sets expectations for process and frustration in class, engages each student, guides the inquiry but does not give answers, and encourages productive struggle. Requires training, experimentation, reflection, and support.  
     
   LCC instructors often mix facilitated group work with their lectures. Some faculty have received training, Ruth Parker workshops for example, but it would be beneficial for more of them to participate in this type of professional development
3. To promote contextualized tasks, adjust course outcomes and assessments to encompass the demands of contextualized tasks and real life applications. These outcomes can't just be math procedures, but rather the thinking skills to employ the math skills that they've learned in the real world.  
     
   The recommendation could be made more clear by emphasizing that course outcomes would need to be changed if contextualized tasks are to be used. Since students generally believe that what is on the test is what we value, it is important that our assessments reflect this new focus.

Group 5 Recommendations

1. Reallocate classroom time to make space to shift faculty role to coach from answer-machine, encourage multiple representations and strategies, and develop students’ abilities to articulate math.  
     
   At LCC we value the goals of encouraging students to articulate their understanding of math concepts using multiple forms of representation. We also seek to shift the role of instructors from being the source of knowledge to being a coach facilitating student’s own discovery.
2. Department-wide collaboration (such as faculty inquiry groups, exchanges and shared activity development) which enables the design of new ways to draw out student thinking, reasoning and sense making.  
     
   In order for this to take place we see a need to reallocate classroom time. Instructors are accomplishing this through faculty collaboration and classroom exchanges. This provides the opportunity to share successful strategies and techniques as well as results of methods that were unsuccessful.
3. Explore and embrace research on theories of student learning with time and framework for discussion.  
     
   The LCC administration has been very supportive of instructors attending professional development opportunities. This has enabled faculty to learn of research on student learning. It also provides a rich venue for sharing with colleagues with other colleges. We fear that without grant sponsored activities, this may be difficult to continue.